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(21) International Application Number: PCT/GB93/02367	(72) Inventors; and
(22) International Filing Date: 17 November 1993 (17.11.93)	(75) Inventors/Applicants (for US only) : MIYAZONO, Kohei [JP/SE]; Flogstavägen 63D, S-752 63 Uppsala (SE). DIJKE, Peter, Ten [NL/SE]; Flogstavägen 25C, S-752 63 Uppsala (SE). FRANZEN, Petra [SE/SE]; Lindsbergsgatan 15b, S-752 40 Uppsala (SE). YAMASHITA, Hidetoshi [JP/SE]; Flogstavägen 33A, S-752 63 Uppsala (SE). HELDIN, Carl-Henrik [SE/SE]; Hesselmans väg 35, S-752 63 Uppsala (SE).
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(71) Applicant (for all designated States except US): LUDWIG INSTITUTE FOR CANCER RESEARCH [GB/GB]; St. Mary's Hospital Medical School, Norfolk Place, Paddington, London W2 1PG (GB).	Published Without international search report and to be republished upon receipt of that report.

(54) Title: ACTIVIN RECEPTOR-LIKE KINASES, PROTEINS HAVING SERINE THREONINE KINASE DOMAINS AND THEIR USE

cons.aa	GG	GV	A	K	E
MTGFR-II	LDLIVGKGRFAEVYKAQKQNTSEQFVAVKIPFYDHYASWKRDKDIFSDINLGHENILQF				
BACTR-IIB	LLEIKARGRFPGCVMKAQLMH-----DPVAVKIKPLQDKQSMQSERELFSTPGQJQHEXILQF				
BACTR-II	LLEVKAQGRFEGCWKAQQLN-----EVAVAKIPPIQDKQSMQNEYEVYSIPGQJQHEXILQF				
daf-1	LTKRVCVSGRFGHNSRQEDYRG-----EAVAVKVTNDJDEPAFKHEIEIFETRMLRHMPLVLR				
subdomains	I		II	III	IV

MTGFR-II	LTAEERKTELQTYMLITAPHAKGNLQEYLTRHVIWEDLRNVGSSLARGLSHLHSQHPP-C		
BACTR-IIB	IAAEERGSNLEVELMLITAFHDKGSLIDYLKQNTIYWNEELCHVAETMSRGISTLHEQDVPWCR		
BACTR-II	IGAEERGTSVDVDMILITAFHEKGSLSDFLQAVVSVNEELCHIAETMARGLAYLHEDIPGLK		
daf-1	IGSDRVDTGFTELMLVIEYHPSGSLLHDFLLENTEVNTIETYNNLRSTASGLAFHMQIGQSK		
subdomains	V		VI-A

cons.aa	DLK	M	DFG	
MTGFR-II	-GRPKMPIVHRLDKSNSILVNDLTCCLCDFGLSIRL-----CPYSSVDDLANSQGVGTARYMAP			
BACTR-IIB	CEGKUPSIAHQDFKSQVILKXSDLTAVLADFGLAQVF---EPGKPPCD---THQGVGTRRYMAP			
BACTR-II	-DGKUPAISKRDIKSXVILKXNTACIAQDFGLAUF---BACKSADD---THQGVGTRRYMAP			
daf-1	-ESNKPAMQHDKISNTMYTQDLCIAQDGLLSLSKPEDAASDIAN--ENYKQGTQVRYLAP			
subdomains	VI-B		VII	VIII

(57) Abstract

A new receptor family has been identified, of activin-like kinases. Novel proteins have activin/TGF- β -type I receptor functionality, and have consequential diagnostic/therapeutic utility. They may have a serine/threonine kinase domain, a DFKSRN or DLKSKN sequence in subdomain VI B and/or a GTKRYM sequence in subdomain VIII.